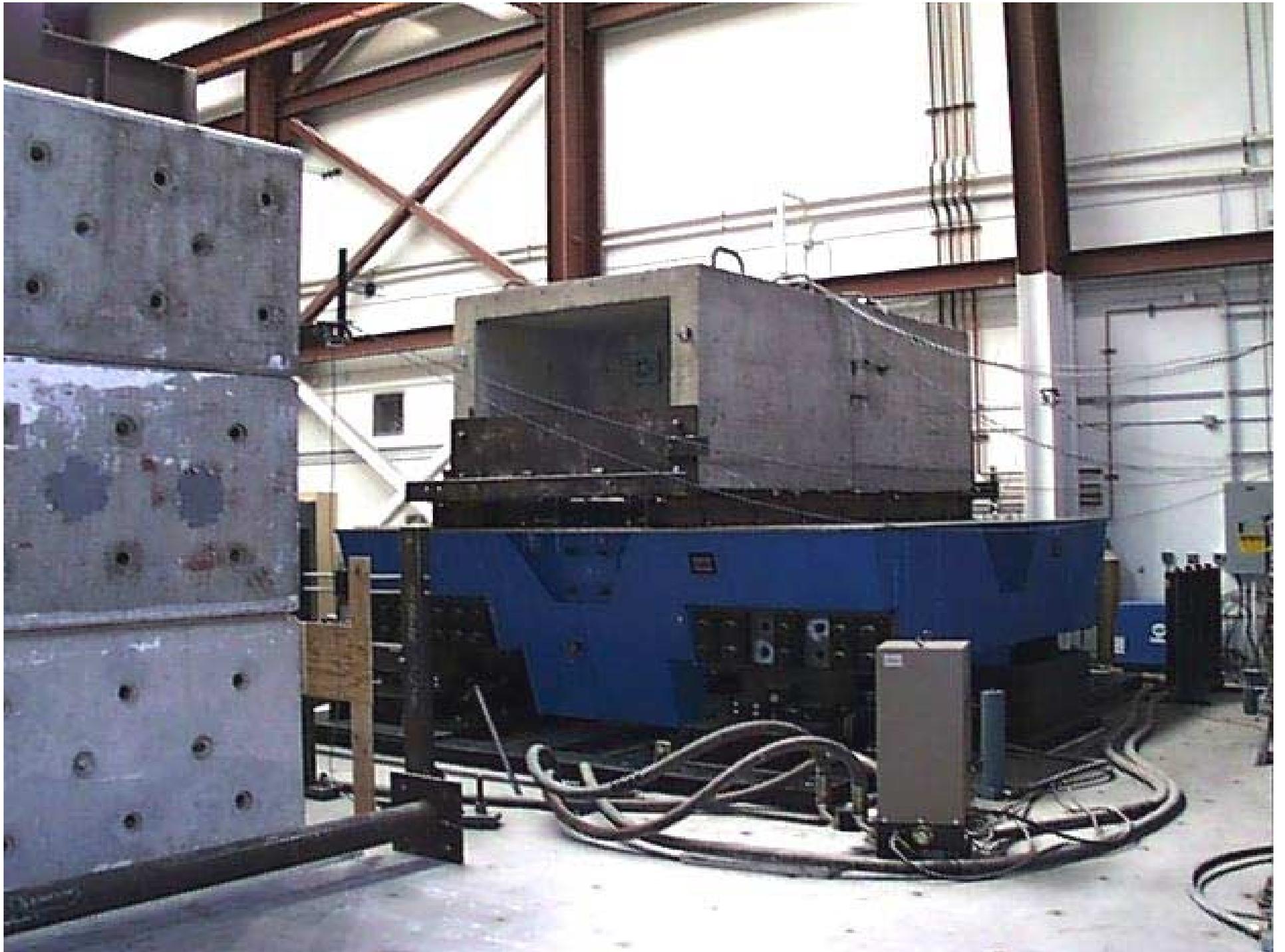
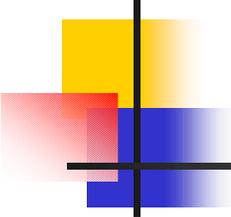


A Multiple Biaxial Shake Table Research Facility

Large-Scale Structures Laboratory
Department of Civil Engineering
University of Nevada Reno

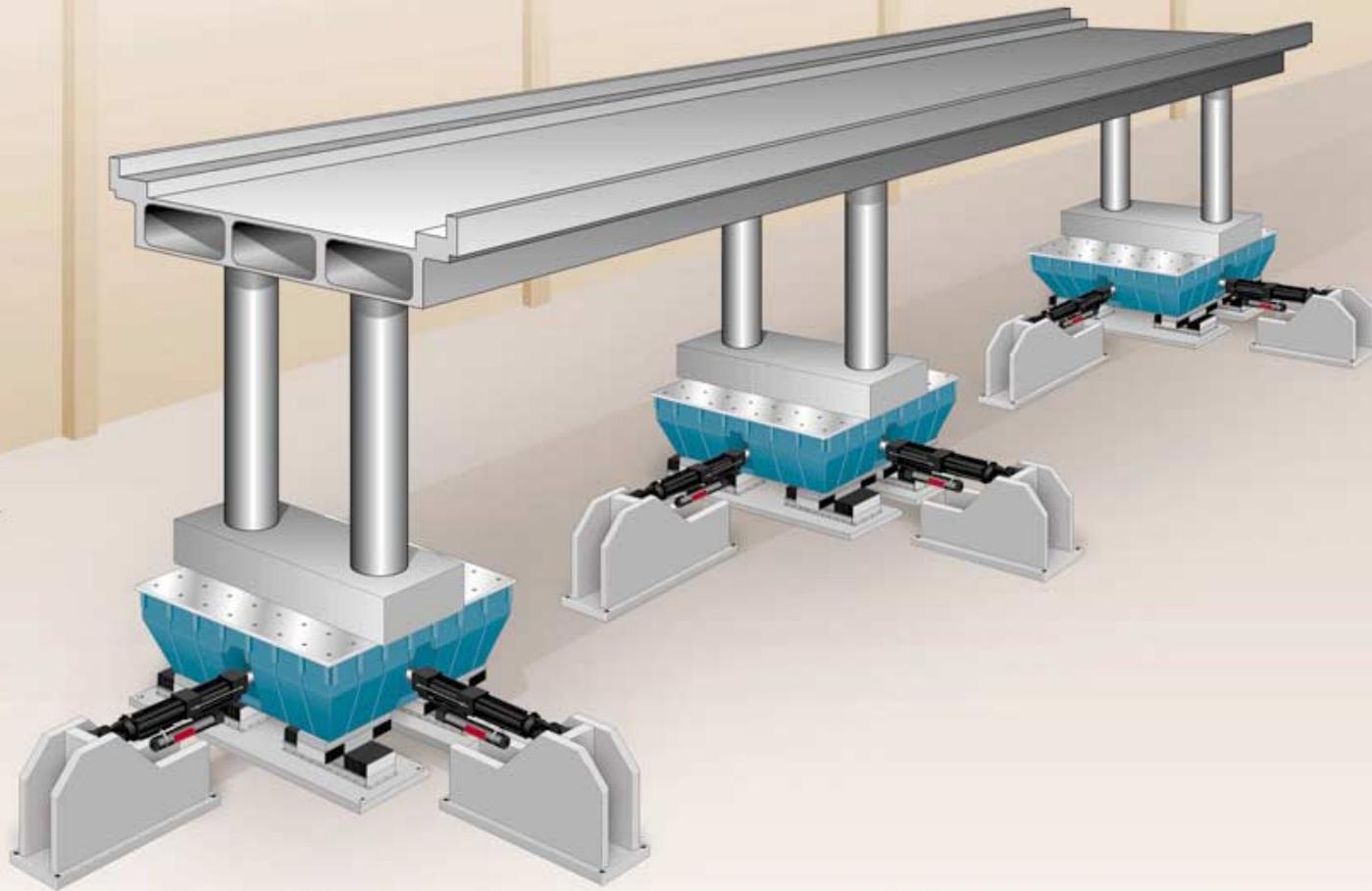






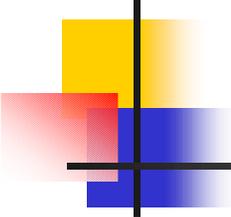
George E. Brown Jr NEES Award to UNR

- Upgrade two existing shake tables from uniaxial to biaxial motion
- Purchase/install third biaxial table, 50 ton, ± 12 inch displacement, 1g, 40 in/sec...
- Upgrade hydraulics and computers to enable simultaneous full operation of all three tables
- Purchase/install hardware/software to create a virtual laboratory for offsite researchers



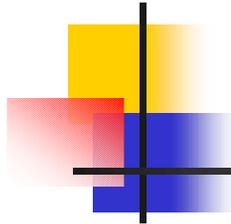
Multiple Shake Table Research Facility

University of Nevada, Reno
Large-Scale Structures Laboratory



Experimental Opportunities

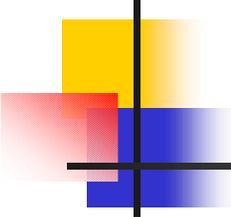
- Multiple support biaxial excitation of distributed structural and geotechnical systems (bridges, pipelines, lifelines...) including spatial variation studies.
- In-phase biaxial excitation of a physically very large and / or a very heavy system
e.g. a 150 ton soil box and structural model
- Simultaneous conduct of up to three independent experiments using three different tables



Teleparticipation Opportunities

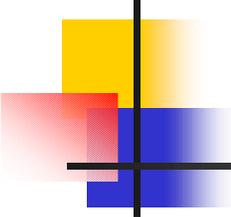
At least four modes of teleobservation and teleoperation envisaged:

- Passive observation
- Active observation
- Hybrid operation
- Active operation



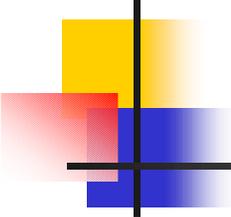
Education Opportunities

- K-12 day-visits and summer camps
- Undergraduate summer internships
- Internships for underrepresented minorities (undergraduates)
- Masters/Doctoral Graduate Study Programs
- Short Courses and Training Workshops
- Continuing Education courses for practicing professionals



NEES Award to UNR

- Total cost of upgrade, expansion and teleparticipation ... \$7.0 million
- Funding from:
 - Nat Science Foundation \$4.4 million
 - Department of Energy \$1.0 million
 - Housing and Urban Dev \$2.6 million



UNR NEES Personnel

Principal Investigator:

Ian Buckle

Co-Principal Investigators

and other senior personnel:

Saiid Saiidi, Manos Maragakis

David Sanders, Ahmad Itani

Gary Norris, Raj Siddarthan,

Gokhan Pekcan, Sushil Louis, Bruce Douglas.